

40. A sealed bearing unit for a marine propulsion system, comprising:

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a) an casing, configured for rotatably receiving a propeller shaft therethrough, wherein a lower end of the casing includes;

b) a bearing housing, having a lower end;

c) a bearing, in rotational communication between the bearing housing and the propeller shaft;

and

d) a seal, contained within the bearing housing, configured to restrict contaminants from entering the bearing housing.

41. A sealed bearing unit as in claim 40, further comprising a cover, coupled to the lower end of the bearing housing, configured for retaining the seal within the bearing housing.

42. A sealed bearing unit as in claim 41, wherein:

a) the lower end of the bearing housing has screw threads; and

b) wherein the cover has screw threads, to allow the cover to be threadably connected to the lower end of the bearing housing.

43. A sealed bearing unit as in claim 41, wherein the cover includes at least one seal contained within the cover.

44. A sealed bearing unit as in claim 40, wherein the bearing housing and the casing are an integral unit.

45. A sealed bearing unit as in claim 40, wherein the bearing housing further comprises an inside and the casing has an outside, and wherein the inside of the bearing housing is coupled to the outside of the casing.

46. A sealed bearing unit for a marine propulsion system, comprising:

a) an casing having an inside, an outside and a lower end, configured for rotatably receiving a propeller shaft therethrough, wherein the lower end of the casing includes;

b) an enlarged bearing housing having an inside, an outside, an upper end and a lower end, wherein the inside diameter of the enlarged assembly housing is larger than the inside diameter of the casing;

c) a bearing, in rotational communication between the enlarged bearing housing and the propeller shaft; and

d) a seal, contained within the enlarged bearing housing, configured to restrict contaminants from entering the enlarged bearing housing.

47. A sealed bearing unit as in claim 46, wherein the bearing includes an outside diameter larger than the inside diameter of the casing.

48. A sealed bearing unit as in claim 46, further comprising a cover, coupled to the lower end of the enlarged bearing housing, configured for retaining the seal within the enlarged bearing housing.

49. A sealed bearing unit as in claim 46, wherein:

a) the lower end of the enlarged bearing housing has screw threads; and

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b) wherein the cover has screw threads, to allow the cover to be threadably coupled to the lower end of the enlarged bearing housing.

50. A sealed bearing unit as in claim 48, wherein the cover includes at least one seal contained within the cover.

51. A sealed bearing unit as in claim 47, wherein the inside of the enlarged bearing housing is coupled to the outside of the casing.

52. A sealed bearing unit as in claim 46, wherein the enlarged bearing housing and the casing are an integral unit.

53. A marine propulsion system having a power source, an elongate rotary drive shaft, an elongate casing surrounding said rotary drive shaft, and a propeller, wherein the improvement comprises:

ball bearings and bearing races which are adapted to separate said drive shaft from said casing;

a housing about said ball bearings and bearing races supported by and removably attached to said casing at a first end and having a first opening adjacent said casing and a second opening;

a removable cover adapted for enclosing said housing second opening and providing access to said ball bearings and bearing races;

whereby said housing and removable cover isolate said bearings from an environment exterior

of said housing.

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54. The marine propulsion system of claim 53, wherein said rotary drive shaft passes through said casing, said bearings, said housing, and said removable cover.

55. The marine propulsion system of claim 54, wherein said housing further comprises threads formed on an exterior diameter of said housing for threadably attaching to mating threads formed on an inside diameter of said casing.

56. The marine propulsion system of claim 55, wherein said removable cover further comprises threads for attaching to said housing.

57. The marine propulsion system of claim 56, wherein said casing, said bearings, said housing, and said removable cover are concentric about said rotary drive shaft.

58. The marine propulsion system of claim 53, wherein said second opening is larger than said ball bearings and bearing races, whereby said ball bearings and bearing races may be removed through said housing.

59. The marine propulsion system of claim 53, wherein said first opening provides access to a side of said ball bearings and bearing races, whereby said ball bearings and bearing races may be pushed from said first opening towards said second opening.

60. The marine propulsion system of claim 59 wherein said housing has an inside diameter adjacent said casing which is greater than an inside diameter of said ball bearings and bearing races.

61. The marine propulsion system of claim 53, further comprising at least one shaft seal adjacent said cover, whereby moisture will be inhibited from passing between said shaft and said cover into said housing by said shaft seal.

62. The marine propulsion system of claim 55, wherein said housing comprises a threaded male connector extending between said casing and said shaft for removably attaching said housing to said casing.

63. A marine propulsion linkage for connecting a propeller to a motive power source, comprising:

- a shaft adapted for rotation about a first axis having a first end and elongated along said first axis from said first end to a second end, said first and second ends terminating said shaft;
- a means for coupling said shaft to said propeller adjacent said second end;
- a means for coupling said shaft to said motive power source adjacent said first end;
- a casing generally concentric with said shaft and elongated along said first axis having a first end adjacent said shaft first end and a second end adjacent said shaft second end;
- a framework attached to said casing and maintaining said casing between said propeller and said motive power source;
- a bearing housing removably attached to and supported by said casing.

64. The marine propulsion linkage of claim 63, wherein said shaft has a maximum radius from said first axis and said casing has a minimum inside diameter greater than said maximum radius.

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65. The marine propulsion linkage of claim 63, wherein said casing fully circumscribes said shaft.

66. The marine propulsion linkage of claim 63, wherein said casing has an exterior profile in the general direction of travel through the water and said housing has a profile similar to said casing profile, so as to prevent the generation of shallow water spray.

67. The marine propulsion linkage of claim 63, wherein said bearing housing has a body which surrounds and locates at least one bearing outer race at said casing second end.

68. The marine propulsion linkage of claim 63, wherein said bearing housing further comprises a nose portion with an outside surface adapted for sealing engagement with said casing

69. The marine propulsion linkage of claim 63, wherein said bearing housing nose portion threads onto said casing.

70. The marine propulsion linkage of claim 63, wherein said bearing housing further comprises an inside surface concentric to said shaft within which said shaft passes.

71. The marine propulsion linkage of claim 67, further comprising a second bearing housing

removably attached to said casing adjacent said casing first end and containing at least one bearing outer race and bearing therein through which said shaft passes and further comprising a fluid seal to obstruct the passage of moisture through said second bearing housing into a cavity between said casing and said shaft.

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72. A marine propulsion system having a power source, a rotary drive shaft, a casing surrounding said rotary drive shaft, and a propeller, wherein the improvement comprises:

ball bearings and bearing races which are adapted to separate said drive shaft from said casing;

a housing about said ball bearings and bearing races, attached to said casing at a first end and having a first opening adjacent said casing and a second opening;

a removable cover adapted for enclosing said housing second opening and providing access to said ball bearings and bearing races;

at least one shaft seal adjacent said removable cover, operatively inhibiting moisture from passing between said shaft and said cover into said housing;

whereby said housing, said removable cover and said shaft seal isolate said bearings from an environment exterior of said housing.

REMARKS

Claims 21 - 31 stand rejected under 35 U.S.C. §102(e) as being clearly anticipated by Foreman. Claims 21 - 31 additionally stand rejected under 35 U.S.C. §112, first paragraph as containing subject matter which was not described in the specification in such a way as to reasonably